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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,778	02/09/2004	Gregor Dudziak	Bayer 10269-WCG	8841

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EXAMINER

MENON, KRISHNAN S

ART UNIT	PAPER NUMBER
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1797

MAIL DATE	DELIVERY MODE
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10/24/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/774,778

Applicant(s)

DUDZIAK ET AL.

Examiner

Krishnan S. Menon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-8 and 10-17 are pending as amended 10/9/07 in the RCE.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-8,10,11 and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Karau, et al (US 6,472,571).

Karau teaches a process for separation from a non-aqueous homogeneous or colloidal solution of a catalyst (abstract, column 2, lines 38-44), with a ceramic membrane having a hydrophobic coating of alkoxysilanes as claimed (see the silanes in column 3, lines 45-67).

Membrane porosity is less than 10 nm preferred (column 4, lines 1-10).

Ceramic is alumina, etc (column 4, lines 9-17)

Non-aqueous solvents taught; specific examples are THF and methanol. (table 1 and 2, examples)

Temperature is in the range claimed – column 2, 3-10; more over, the range includes ambient, and unless the reference specifies a temperature, ambient temperature would be implied. Pressure required for the membrane process also would be implied in the reference, unless applicant can show criticality of the range.

Applicant's arguments traversing this rejection are not persuasive.

The reference teaches use of a ceramic membrane, as claimed, in recovering dissolved or colloiddally soluble catalyst (column 2, lines –64). The reference does not teach synthesizing the catalyst, but only teaches using the catalyst for synthesizing organic compounds. The term 'increased molecular weight' in this reference appear to mean only *higher molecular weight*. The office does not believe that the catalyst is somehow growing in molecular weight in the process described in this reference. This is evident from the paragraph at column 4, lines 32-41. This paragraph teaches about catalyst "Catalyst having increase molecular weight made from dendritic, linear or variously branched homopolymer ...", etc., which only explains the source for the catalyst. The claims of the reference also anticipate the instant claims.

Moreover, even if the reference had taught the catalyst molecules as 'growing' in molecular weight, it still would anticipate the instant claims – the membrane is the same as what applicant claims.

Argument that the reference teaches only two layers is not persuasive: the reference has a ceramic support layer, an inter layer and a silane layer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 12-14 are rejected under 35 U.S.C. 102(b) as anticipated by Karau, or alternately, under 35 USC 103(a) as being unpatentable over Karau as applied to claim 2 in paragraph 2 above, and further in view of WO 01/07157.

Claims differ from the reference in the teaching of the catalyst. However, as stated in paragraph 3 above, under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. In re King, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986). In the instant case, the membrane used is the same as claimed, therefore Karau reference could be considered as anticipating the claims.

WO teaches a process for separating solutes or colloids such as catalysts (page 7, 8: rhodium-organophosphite complex) from a non-aqueous solution. Membrane is ceramic (alumina, zirconia: page 10), with coating (the sub-nanoporous coating of metal or ceramic or inorganic polymeric material is a coating (page 7) (but WO does not teach the specific silane claimed). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of WO in the teaching of Karau to use the Karau membrane for such applications as taught by WO. One would use the Karau membrane for such applications because of the advantages of Karau membrane, such as extremely high retention ability of the catalyst, as taught in column 2, lines 51-64.

3. Claims 1,2, 7,8 and 10-17 are rejected under 35 U.S.C. 102 (b) as being anticipated by, or in the alternative, under 103(a) as being unpatentable over Cohen (US 6,440,309).

Cohen teaches a process for separation from non-aqueous solutions of a substance by pervaporation – pervaporation is a process of separating liquid mixtures using a membrane (abstract, and column 1 lines 1-23). Membrane is porous with pore size less than 2-50 nm (20-500Å), formed on a ceramic substrates (alumina, etc: column 6 lines 50-65), and hydrophobic coating applied by reaction with tetraethoxysilane (column 6 lines 1-25). Surface is hydrophobic – the silane used is as claimed – see the structure in column 6.

Applicant's process as recited in claim 1 is a method comprising passing a non-aqueous solvent through a ceramic membrane having a silane coating, and having a mean pore size not more than 30 nm. The solid substance in colloidal or dissolved form in the preamble of the claim 1 does not appear to be limiting. Cohen differs from the claims in the solute separated being a "solid" and a catalyst. However, since the membrane is capable of removing volatile solvents from a solution, the reference anticipates, or at least makes obvious, the claimed process. Under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed

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the device will inherently perform the claimed process. In re King, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986).

However, even if the preamble of the claim is considered limiting, the claims are still anticipated, or made obvious by the reference by in re King. Process of removing volatile organic solvents using membranes is known in the art; one of ordinary skill would use the teaching of this reference to remove organic solvents from the solution as taught by this reference using the membrane of the reference. See KSR Int'l. v. Teleflex Inc., 127 S. Ct. 1727, 1732, 82 USPQ2d 1385, 1390 (2007). "it is commonsense that familiar items have obvious uses beyond their primary purposes". "Substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention". In this case, the process is removing organic solvent from a solid material that is dissolved in or in colloidal suspension in the solvent. Since the process described the reference removes organic solvents from a similar situation, i.e., having dissolved or emulsified water, removal of organic solvents from the catalyst solution is predictable.

Applicant's argument about pervaporation process is not commensurate in scope with the claims.

4. Claims 1-8 and 10-17 are rejected under 35 U.S.C. 35 USC 103(a) as being unpatentable over Cohen as applied in paragraph 3 above and further in view of WO 01/07157.

Instant claims differ from the teaching of Cohen in having the solute as a catalyst. However, under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. In re King, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986). In the instant case, the membrane used is the same as claimed, therefore Cohen reference could be considered as anticipating the claims.

WO teaches a process for separating solutes or colloids such as catalysts (page 7, 8: rhodium-organophosphite complex) from a non-aqueous solution. Membrane is ceramic (alumina, zirconia: page 10), with hydrophobic coating (the sub-nanoporous coating of metal or ceramic or inorganic polymeric material is a coating (page 7) (but WO does not teach the specific silane claimed). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of WO in the teaching of Cohen to use the Cohen membrane for such applications as taught by WO. One would use the Cohen membrane for such applications because of the advantages of Cohen membrane as taught in column 5 lines 44-63 and column 7 lines 47-52.

Response to Arguments

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Applicant's arguments filed with the RCE of 10/9/07 have been fully considered but they are not persuasive. Response is included in the rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Krishnan S Menon
Primary Examiner
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